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TEMPORAL LOBE SIGNS AND ENHANCED PLEASANTNESS SCORES FOR WORDS GENERATED DURING SPONTANEOUS NARRATIVES [1]

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Summary.—Temporal lobe function has been strongly implicated in the processes of semantic selection. Within this context, enhanced activity of deep mesiobasal structures is expected to influence the affective dimensions of language use. Quantitative measures of the evaluative (pleasantness) dimension but not the activity (arousal) dimension of words generated during narratives of subjective experiences within an exotic setting were significantly correlated with the numbers of temporal lobe signs.

Whissell (1989) has demonstrated that the affective components of words can be quantified along dimensions of activity (or arousal) and evaluation (or pleasantness). Persinger and Makarec (1987) have hypothesized that normal people who display temporal lobe signs also exhibit widened and intensified affect. Within specific situational demands that promote imagery and relaxation, the widened affect should be manifested as enhanced "pleasantness." Consequently, people who report frequent temporal lobe signs should tend to generate words with greater evaluative loading.

To test this hypothesis each of 20 university students (10 men, 10 women, 19 to 25 yr. of age and recruited from classes not taught by the experimenters) wore opaque goggles and sat quietly for 30 min. within an acoustic chamber that was illuminated with a dim red light. They were asked to describe their subjective experiences while listening to exotic music (Astral Sounds). During this period 4 to 12 Hz, 0.1 to 1 milligauss, pulsed (0.3 msec.) magnetic fields were applied during alternate 5-min. periods across the plane of the temporal lobes by methods described previously (De Sano & Persinger, 1987).

The words from each narrative were transcribed and analyzed by computer automatically by Whissell's Dictionary of Affect in Language. At least two days before or after the generation of the narratives, students completed a temporal lobe signs inventory (Persinger & Makarec, 1987); scores for numbers of temporal lobe signs and a control measure (for responding yes) were determined by dividing the numbers of affirmative responses by the numbers of items ($n = 16$) in each scale. The group means and standard deviations (in parenthesis) for the two scales were 30.1% (15.1) and 80.5% (11.9), comparable to those from other populations.

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The means and standard deviations for the activity and evaluation scores for the words selected by the subjects were 4.30 (0.37) and 4.66 (0.45), respectively; the mean total numbers of scorable words displayed was 69.3 (68.0). Spearman analyses, completed by SPSS^x software on a VAX computer, gave a statistically significant correlation of 0.48 between the numbers of temporal lobe signs and the evaluative scores but not the activity scores (-0.28). Responses on the control scale were not significantly correlated with the evaluative (*rho* = 0.02) or the activity (-0.28) weightings of the words.

Our hypothesis was confirmed that people who display more frequent temporal lobe signs also spontaneously generate words that contain greater pleasantness weightings. Because Whissell's Dictionary of Affect in Language is based upon the average ratings of 4000 English words (accumulated over several years) from a general student population from which the present subjects were obtained, it is unlikely that the present results reflect an instrumental artifact.

These results are compatible with the concept that varying electrical lability of deep temporal-lobe structures influences the selection of the words from the semantic lexicon according to an affective dimension. These results imply that people with specific personality features, coupled to temporal lobe signs, may select words that exhibit more pleasant affect than those who show fewer signs. Such a propensity would be compatible with the observation that temporal lobe signs and mystical, peak, or religious experiences are often associated.

However, within the context of the present design we cannot determine whether (1) the neurocognitive processes that determine the selection of the words used to describe subjective experiences were affected, (2) the exotic treatment interacted with temporal lobe factors to enhance the selection of these words, or (3) people with temporal lobe signs simply generate more pleasant subjective experiences that are reflected by correlative words.

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